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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,845	09/18/2003	William Berardi	02103-556001 / AABOSW23	8903
26162 7590 09/25/2007 FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER LAO, LUN S	
			ART UNIT 2615	PAPER NUMBER
			MAIL DATE 09/25/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/665,845

Applicant(s)

BERARDI ET AL.

Examiner

Lun-See Lao

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 07-11-2007.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. This action is in response to the amendments filed on 07-11-2007. Claims 1-6, 11, 15 and 19 have been amended and claims 18-19 have been added and claim 10 has been cancelled. Claims 1-9 and 11-20 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-9 and 11-20 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5870484 to Greenberger.

4. Regarding Claim 1, Greenberger discloses a method of electroacoustical transducing comprising

controlling audio electrical signals to be provided to a pair of electroacoustical transducers of an array to achieve directivity and acoustic volume characteristics as a function of at least one of volume control or a detected signal to reduce cancellation of acoustic output signals from the pair of electroacoustical transducer (reads on the feedback topology, where the monitoring point in the circuit occurs after the variable gain amplifier in fig. 28 and see col. 52 line 25-col. 53 line 41), the controlling of the

Art Unit: 2615

signals resulting in a change in the radiated acoustic power spectrum of the array as the characteristics are varied (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48), and

adjusting equalization to compensate for the change in the radiated acoustic power spectrum of the array (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 58, line 39 to column 59, line 47).

Regarding Claim 2, Greenberger discloses the adjusting equalization to compensate for the change in the acoustic power spectrum comprises maintaining the radiated relative acoustic power spectrum substantially uniform (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 55, lines 22-65; column 56, lines 13-23; column 58, line 39 to column 59, line 47).

Regarding Claim 3, Greenberger discloses the adjusting occurs prior to the controlling (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 58, line 39 to column 59, line 47).

Art Unit: 2615

Regarding Claim 4, Greenberger discloses the change in the acoustic power spectrum resulting from the controlling of the signals is predicted, and the adjusting is based on the predicting (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 55, lines 22-65; column 56, lines 13-23; column 58, line 39 to column 59, line 47).

Regarding Claim 5, Greenberger discloses the adjusting is based on a volume level selected by a user (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 55, lines 22-65; column 56, lines 13-23; column 58, line 39 to column 59, line 47).

Regarding Claim 6, Greenberger discloses the adjusting is based on a signal level detected in the controlled audio electrical signals (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 55, lines 22-65; column 56, lines 13-23; column 58, line 39 to column 59, line 47).

Regarding Claim 7, Greenberger discloses the controlling comprises reducing the amplitude of one of the audio electrical signals for higher acoustic volume levels (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4,

Art Unit: 2615

line 24; column 37~ lines 34-59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 55, lines 22-65; column 56, lines 13-23; column 58, line 39 to column 59, line 47).

Regarding Claim 8, Greenberger discloses the controlling comprises combining two components of an intermediate electrical signal in selectable proportions (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 55, lines 22-65; column 56, lines 13-23; column 58, line 39 to column 59, line 47).

Regarding Claim 9, Greenberger discloses the controlling of the audio electrical signals comprises adjusting a level of one of the signals over a limited frequency range 1 (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 55, lines 22-65; column 56, lines 13-23; column 58, line 39 to column 59, line 47).

Regarding Claim 11, Greenberger discloses an electroacoustical transducing apparatus comprising:

an input terminal to receive an input audio electrical signal (Figs. 2-10, 13, 15-19, 21-22, and 26-29), and a plurality of electroacoustical transducers in an array (Figs. 2-10, 13, 15-19, 21-22, and 26-29),

Art Unit: 2615

circuitry constructed and arranged to generate two related output audio electrical signals from the input audio signal coupled to said electroacoustical transducers of an array, and to achieve predefined directivity and acoustic volume characteristics as a function of at least one of volume control or a detected signal to reduce cancellation of acoustic output signals from the pair of electroacoustical transducer (reads on the feedback topology, where the monitoring point in the circuit occurs after the variable gain amplifier in fig. 28 and see col. 52 line 25-col. 53 line 41)

and to adjusting equalization to compensate for a change in acoustic power spectrum of the array that results from the controlling of the signals (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 55, lines 22-65; column 56, lines 13-23; column 58, line 39 to column 59, line 47).

Regarding Claim 12, Greenberger discloses the circuitry comprises a dynamic equalizer (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 55, lines 22-65; column 56, lines 13-23; column 58, line 39 to column 59, line 47).

Regarding Claim 13, Greenberger discloses the dynamic equalizer includes a pair of signal processing paths and a combiner to combine signals that are processed on the two paths (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48; column 48, lines

Art Unit: 2615

41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 55, lines 22-65; column 56, lines 13-23; column 58, line 39 to column 59, line 47).

Regarding Claim 14, Greenberger discloses the circuitry is also constructed and arranged to compensate for the change based on a volume level (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 55, lines 22-65; column 56, lines 13-23; column 58, line 39 to column 59, line 47).

Regarding Claim 15, Greenberger discloses an electroacoustical transducer array comprising,

a source of related electrical signal components (Figs. 2-10, 13, 15-19, 21-22, and 26-29),

a plurality of electroacoustical transducers driven respectively by said related electrical signal components (Figs. 2-10, 13, 15-19, 21-22, and 26-29), an input terminal to receive input audio electrical signal (Figs. 2-10, 13, 15-19, 21-22, and 26-29), and

circuitry constructed and arranged to generate two related output audio electrical signals coupled to said electroacoustical transducers of an array, to control the two related output signals to achieve predefined directivity and acoustic volume characteristics as a function of at least one of volume control or a detected signal to reduce cancellation of acoustic output signals from the pair of electroacoustical transducer (reads on the feedback topology, where the monitoring point in the circuit occurs after the variable gain amplifier in fig. 28 and see col. 52 line 25-col. 53 line 41),

Art Unit: 2615

and to adjust equalization to compensate for a change in radiated acoustic power spectrum of the array that results from the controlling of the signals (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34- 59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 55, lines 22-65; column 56, lines 13-23; column 58, line 39 to column 59, line 47).

Claim 16 is essentially similar to Claim 12 and is rejected for the reasons stated above apropos to Claim 12.

Claim 17 is essentially similar to Claim 13 and is rejected for the reasons stated above apropos to Claim 13.

Regarding Claim 18, Greenberger discloses a second input terminal to carry a signal indicating a volume level for use by the circuitry (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51 line 42 to column 52, line 15; column 55, lines 22-65; column 56, lines 13-23; column 58, line 39 to column 59, line 47).

Regarding Claim 19, Greenberger discloses a sound system comprising, a source of related electrical signal components (Figs. 2-10, 13, 15-19, 21-22, and 26-29), a pair of electroacoustical transducer arrays, each of the arrays (Figs. 2-10, :13, 15-19, 21-22, and 26-29) comprising a plurality of electroacoustical transducers driven respectively by said related electrical signal components (Figs. 2-10, 13, 15-19, 21-22, and 26-29), and an input terminal to receive an input audio electrical signal (Figs. 2-10, 13, 15-19, 21-22,

Art Unit: 2615

and 26-29); and circuitry constructed and arranged to generate two related output audio electrical signals coupled to said electroacoustical transducers of an array, to control the two output signals to achieve predefined directivity and acoustic volume characteristics as a function of at least one of volume control or a detected signal to reduce cancellation of acoustic output signals from the pair of electroacoustical transducer(reads on the feedback topology, where the monitoring point in the circuit occurs after the variable gain amplifier in fig. 28 and see col. 52 line 25-col. 53 line 41), and to adjust equalization to compensate for a change in acoustic power spectrum of the array that results from the controlling of the signals (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 55, lines 22-65; column 56, lines 13-23; column 58, line 39 to column 59, line 47).

Regarding Claim 20, Greenberger discloses said array comprises first and second closely spaced loudspeaker drivers having their axes angularly displaced by substantially 60 degrees (Figs. 2-10, 13, 15-19, 21-22, and 26-29; column 1, lines 1-32; column 3, line 31 to column 4, line 24; column 37, lines 34-59; column 40, lines 5-48; column 48, lines 41 to column 50, line 62; column 51, line 42 to column 52, line 15; column 55, lines 22-65; column 56, lines 13-23; column 58, line 39 to column 59, line 47).

Response to Arguments

5. Applicant's arguments filed 07-11-2007 have been fully considered but they are not persuasive.

Applicant argued with that. Greenberger did not describe and would not have made obvious " as a function of at least one of volume control or a detected signal to reduce cancellation of acoustic output signals from the pair of electroacoustical transducer" (see remarks page 6 3rd paragraph).

The examiner disagrees. Greenberger teaches as a function of at least one of volume control or a detected signal to reduce cancellation of acoustic output signals from the pair of electroacoustical transducer, such as the feedback system where the monitoring point (as a detected signal) in the circuit occurs after the variable gain amplifier to the control voltage in fig. 28 and see col. 52 line 25-col. 53 line 41. It meets the limitation as recited in the claim 1.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2615

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Aylward (US PAT. 2004/0196982) is recited to show how other related ELECTROACOUSTICAL TRANSDUCING.

8. Any response to this action should be mailed to:

Mail Stop ____ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:
(571) 273-8300

Hand-delivered responses should be brought to:
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao, Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin, can be reached on (571) 272-7848.

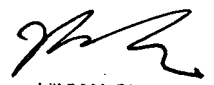
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Application/Control Number: 10/665,845

Page 12

Art Unit: 2615

Lao, Lun-See *L.S.*
Patent Examiner
US Patent and Trademark Office
Knox
571-272-7501
Date 09-05-2007


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